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DIGITAL DIVIDE: RURAL AND URBAN COLLEGE STUDENTS' ATTITUDE TOWARDS TECHNOLOGY ACCEPTANCE

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ABSTRACT

Technology-driven learning is bringing a massive difference to education in rural areas of India. The purpose of the study is to examine the discrepancies of technology acceptance between rural and urban college students of India. This study explored the attitudes of 173 male and female college students from rural and urban background in India towards technology acceptance. A seven point Likert scale was constructed to measure the participants' attitudes towards: 1) Perceived Usefulness, 2) Perceived Ease of Use 3) Intention to Use and 4) Computer Self-efficacy. The independent t-test was used to analyze the data. The results showed that in general students' attitude towards technology acceptance do not differ in terms of geographic location. Furthermore, the results indicated that digital inequalities between rural and urban locality did not exist in all four types of variables tested. Discussions about the findings and future directions were also provided.

KEYWORDS: Internet, Social Media, Students, Technology Acceptance

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Review Article

INTRODUCTION

Technology has become a tool for enhancing human knowledge. In this age of technology development, digital products have become an essential part of individuals' day to day lives, work and entertainment. The impact of technology development has changed communication pattern from a single-way to multi-dimensional in which users become information participants or providers rather than passive receivers. As a result, the new digital ecology has gradually developed. One such technology is the Internet, have made significant impact in modern India. According to the Internet and Mobile Association of India (IAMAI), number of internet users in India has reached 354 million as of June 2015.

According to Joo (1999), "the Internet opens classrooms to the world; the Internet opens the world to classrooms". There is a concrete role of internet with computers in society and schools. Internet is used in today for teaching, research, social interaction, and communication & information exchange. As the Internet is widely used for educational settings, learners may have more experiences of utilizing the Internet. Forcier (1996) found that technology and internet reflect support for new dimensions under the perspective of education and explains how students can gain knowledge of it and use it in efficient way. Grabe and Grabe (2001) revealed that there are many ways of Internet access that facilitate the stable, comfort and significant knowledge of students. Due to Internet the worldwide education scenario has been changed now. Many Universities are providing online

education to their students all over the world through Internet. In India many of colleges and universities classroom are set to access Internet for lecture delivering.

Theoretical Background

The Technology Acceptance Model (TAM) was developed by Davis (1989) to understand the usage behavior of information technology. The theory was adopted from Theory of Reasoned Action (Fishbein & Ajzen, 1975). The TAM addresses the issue of how users accept and uses a new technology (Davis, 1989). Based on the beliefs, attitudes, intentions, and behaviors framework, TAM is "specifically meant to describe computer usage behavior…across a broad range of end user computing technologies and user populations" (Davis, et al., 1989). Since then TAM has became a widely applied models for explaining and predicting intentions and acceptance behaviors of computer technologies (Venkatesh, 2000). For more than two decades, TAM has been accepted as a valid model for predicting the acceptance of information technology in work and academics (Chau, 1996; Davis, et al., 1989; Johnson & Hignite, 2000; Kim & Bonk, 2006; Lu, et al., 2003; Mathieson, 1991; Morris & Dillon, 1997; Szajna, 1996; Venkatesh, 2000; Venkatesh & Davis, 2000; Yi & Hwang, 2003).

In addition, the TAM suggests that there are several variables influence the individual's decision to use a new technology and how they will use it. Two major variables influence this decision: perceived usefulness (PU) and perceived ease of use (PEOU) of the relevant technology. Perceived usefulness is defined as "the degree to which a person believes that using a particular system would enhance his or her job performance". And perceived ease of use is defined as "the degree to which a person believes that using a particular system would be free of effort" (Venkatesh & Davis, 2000). Since then, TAM has been extended to many context of technology such as perceived enjoyment, intention to use, social influence, computer self-efficacy and perceived belonging to confirm the model's validity.

LITERATURE REVIEW

Mun and Yujong (2003) experimented with students to use Microsoft end-user applications for a period of eight weeks. After a trial period of two weeks, they have identified that students' self-efficacy, enjoyment and learning goal orientation determined the actual use and acceptance of the system. Shen, Laffey, Miller, Rainer and Corley (2003) found that perceived ease of use and perceived usefulness had a significant positive relationship with the amount of time students spend on a course. They also noted that both are significant factors for predicting intention to use the technology. The concept of computer self-efficacy has been shown to be suitable when dealing with a task that demands computer use. Computer self-efficacy has referred to a person's judgment of his/her capability to use a computer in prospective situations (Compeau & Higgins, 1995). Previous studies have shown self-efficacy has been a good predictor to student achievement in online courses, in other words, the more capabilities they used, the more effective the students (Jourdan, 2003; Mylona, 1999; Pan, et al., 2005a; Pan, et al., 2005b).

Research shows that Japanese students at the top ranked high schools tend to use computers in the classroom less frequently than those in other schools. Also, elementary students in the large cities tend to use computers more often than those living in the rural areas, while this trend is reversed in middle grade and high school levels (Benesse Educational Research and Development Center, 2008). In the US, the frequency of technology use in the classroom does not differ between elementary and secondary schools both in the city and the rural district (Gray et al., 2010). A digital divide between urban and rural areas was reported in several studies. A European survey has identified differences between city

and rural regions with rural regions often lacking broadband access (Eurostat (2005). Digital inequalities between rural and urban areas were also reported by Looker and Thiessen (2003), Nikam, Ganesh and Tamizhchelvan (2004), Hubregtse (2005), Ma (2005) and Cooper (2006).

With 1.28 billion people and over 200 million households, India is one of the biggest emerging economies in the world. With the arrival of the technology revolution, India and its villages are slowly but steadily getting connected to each other and the world beyond. As a powerful knowledge economy, India may have been slow to adopt technology, but it certainly has caught up with developed economies and is ahead in important respects. The Government has taken initiative to support rural development by setting up digital libraries, encouraging e-business, e-learning and e-governance. Very little is known, however, about digital divide in India, which suggests that it requires an investigation. This is a particularly interesting moment in Indian history in which to explore the issue, because there has been significant change in technology acceptance. The present study is aimed at investigating the attitude towards technology acceptance among rural and urban college students from Tamilnadu. With respect to the aim of the study, the following research question was proposed:

Is there any significant attitude difference in terms of perceived usefulness, perceived ease of use, intention to use and computer self-efficacy towards technology acceptance between rural and urban college students in India?

METHOD

Participants

This study sampled a total of 173 students of rural (*n=107*) and urban (*n=66*) areas from various colleges and universities in India. Participation was voluntary and data were collected through a survey questionnaire.

Measures

The purpose of this study was to identify the differences of four predictors of TAM among rural and urban college students. The four predictors were; (i). Perceived Usefulness (PU), (ii). Perceived Ease of Use (PEOU), (iii). Intention to Use (IU), and (iv). Computer Self-efficacy (CSE). The researcher adopted measures validated by previous studies. All items used a seven-point Likert scale, where 1 = strongly disagree and 7 = strongly agree. The questionnaire was evaluated for reliability, and all reliabilities were satisfactory (PU = 0.92, PEOU = 0.87, IU = 0.91, & CSE = 0.89). The Cronbach alpha for the entire scale was 0.74.

RESULTS

Table 1: The Independent Samples T-Test Analysis of Differences in Perceived Usefulness between Rural and Urban Students

	Location	N	Mean	SD	*t*	*P**
Perceived Usefulness	Rural	107	50.03	13.72	1.14	0.26
	Urban	66	52.30	10.90		

**p=<0.05*

The independent t-test analysis indicated that there is no statistically significant difference between rural and urban college students with regarding to perceived usefulness. This means that attitude of rural and urban students towards perceived usefulness are similar.

Table 2: The Independent Samples T-Test Analysis of Differences in Perceived Ease of Use between Rural and Urban Students

	Location	N	Mean	SD	*t*	*P**
Perceived Ease of Use	Rural	107	49.44	11.05	1.38	0.17
	Urban	66	51.74	10.06		

**p=<0.05*

Table 2 presents the t-test scores on students (from rural and urban areas) attitude towards perceived ease of use. According to the table, the difference was considered to be not statistically significant, indicating that attitudes of rural and urban students were alike.

Table 3: The Independent Samples T-Test Analysis of Differences in Intention to Use between Rural and Urban Students

	Location	N	Mean	SD	*t*	*P**
Intention to Use	Rural	107	46.64	12.27	1.55	0.12
	Urban	66	49.68	12.85		

**p=<0.05*

Table 3 shows the statistical scores of the student's attitude towards intention to use of technology. The independent t-test revealed that there was no significant difference between attitudes of rural and urban areas in Tamilnadu towards intention to use. This means that attitudes of rural and urban students towards intention to use were similar.

Table 4: The Independent Samples T-Test Analysis of Differences in Computer Self-Efficacy between Rural and Urban Students

	Location	N	Mean	SD	*t*	*P**
Computer Self-Efficacy	Rural	107	48.45	12.70	0.82	0.41
	Urban	66	50.06	12.33		

**p=<0.05*

Table 4 depicts the statistical scores of attitude towards computer self-efficacy among rural and urban college students. This difference was considered to be not statistically significant. The results show that the students' attitudes of computer self-efficacy were similar between rural and urban students.

DISCUSSIONS

The study produced several important findings regarding rural and urban students' attitude towards technology acceptance. The result of the study confidently shows that there was no significant difference between the attitudes of rural and urban students towards technology acceptance. In this study, students attitude of technology acceptance did not differ based on geographical locations; interestingly students from both areas hold positive attitudes toward technology integration and believes technology enhance their performance. Students in both locations generally agree that recent technology innovations were easy to navigate. In terms of students perceptions of their ability to use computers to accomplish a task as well as intention to use computers did not differ between rural and urban students

Since there no significant difference between rural and urban students seems to be important for this age group. As Reddick et al. (2000) explained, youths generally were heavy users when it comes to technologies such as the Internet. While rural and urban youth were equally likely to have used technology innovations, their patterns of use may be differ.

An interesting point to note that there may be discrepancies in access to quality internet in rural areas, but the students in rural areas were par with the students in urban areas in most digital related opportunities.

The lack of significance differences might be due to several reasons. First, We Are Social's previous studies about digital use in India (2011, 2012 and 2014) have shown that growth of internet access holds the key to breaking down this digital divide. For example, the 44% growth of active internet users in the past year alone gave an impressive growth figure that contributed to adoption of internet usage across the country (Kemp, 2015). Secondly, A student online behavior report conducted by HT Digital and IMRB shows 93 percent of Indian students access the Internet everyday and 73% of them use the mobile phones to access the Internet, i.e. Indian students not far off from American students where 96 percent of them uses internet for educational content (Khanna, 2014).

CONCLUSIONS

The overall findings of the study indicated that there were no digital inequalities towards technology acceptance between rural and urban college students in India. Technology in the rural areas has been hugely accepted by students pursuing their higher studies. Most of the rural students are frequent users of internet. Even though rural India severely suffers from various problems including infrastructure and power, technology attracts the rural students. Computer education gives them the confidence and it narrows down the gap between urban and rural education. Especially the rural students are now welcoming the idea of using smartphones and are equally comfortable with using technology devices. Online learning or e-learning found to be highly emerging learning tool for modern education in rural India. There were several limitations needs to be acknowledged. This study was restricted to one state in India and was based on self-reported instrument which can be subjectively biased by respondents. In future research, some other geographic areas and demographic characteristics could be considered. Notwithstanding of the limitations, the findings of the study provides the clear evidence that India truly bridge the digital divide among youth.

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